

User Manual

Revision 2.003
English

RS232 / RS485 / Ethernet - Converter

(Order Code: HD67120)

for Website information:

www.adfweb.com?Product=HD67120

for Price information:

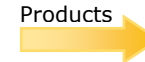
www.adfweb.com?Price=HD67120

Benefits and Main Features:

- ▶ Interfacing directly to 485 without other adaptor
- ▶ Galvanic isolation between Ethernet and 232/485 bus
- ▶ Protocol independent
- ▶ Suitable for supervision software
- ▶ SCADA/HMI and the connection to a Personal Computer
- ▶ Automated control of the line directions
- ▶ Easy to use software configuration
- ▶ Compatible with: Windows 98/ME/2000/XP



Similar Products



For others Converter / Adapter:

RS232 / RS485

See also the following link:

www.adfweb.com?Product=HD67118

USB / RS485

See also the following link:

www.adfweb.com?Product=HD67119

Do you have an your customer protocol?

See the following link:

www.adfweb.com?Product=HD67003

Do you need to choose a device? do you want help?

Ask it to the following link:

www.adfweb.com?Cmd=helpme

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UPDATED DOCUMENTATION:

Dear customer, we thank you for your attention and we remind you that you need to check that the following document is:

- Updated
- Related to the product you own

To obtain the most recently updated document, note the "document code" that appears at the top right-hand corner of each page of this document.

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To obtain the updated documentation for the product that you own, note the "Document Code" (Abbreviated written "Doc. Code" on the label on the product) and download the updated from our web site www.adfweb.com/download/

REVISION LIST:

Revision	Date	Author	Chapter	Description
1.005	19/06/2005	Ddt	All	documentation code changed
1.006	22/06/2007	Av	All	Revision
1.007	26/06/2007	Av	All	Revision
1.008	11/07/2007	Av	All	accessories code changed
2.000	12/07/2007	Av	All	New document format
2.001	20/07/2009	MI	All	Revision
2.002	5/07/2010	FT	All	Revision
2.003	13/02/2013	Nt	All	Added new chapters

WARNING:

ADFweb.com reserves the right to change information in this manual about our product without warning.

ADFweb.com is not responsible for any error this manual may contain.

TRADEMARKS:

All trademarks mentioned in this document belong to their respective owners.

SECURITY ALERT:**GENERAL INFORMATION**

To ensure safe operation, the device must be operated according to the instructions in the manual. When using the device are required for each individual application, legal and safety regulation. The same applies also when using accessories.

INTENDED USE

Machines and systems must be designed so the faulty conditions do not lead to a dangerous situation for the operator (i.e. independent limit switches, mechanical interlocks, etc.).


QUALIFIED PERSONNEL

The device can be used only by qualified personnel, strictly in accordance with the specifications.

Qualified personnel are persons who are familiar with the installation, assembly, commissioning and operation of this equipment and who have appropriate qualifications for their job.

RESIDUAL RISKS

The device is state of the art and is safe. The instrument can represent a potential hazard if they are inappropriately installed and operated by personnel untrained. These instructions refer to residual risks with the following symbol:

 This symbol indicates that non-observance of the safety instructions is danger for people to serious injury or death and / or the possibility of damage.

CE CONFORMITY

The declaration is made by us. You can send an email to support@adfweb.com or give us a call if you need it.

CHARACTERISTICS:

Ethernet to RS232/RS485 is a professional device for using COM port through Ethernet line.

This device allows the following configurations:

- Remote COM Port;
- Tunnel Point to Point (Ethernet bridge for a serial line);
- Tunnel Point to Multipoint (typical 485 connection with Master and slaves, but through Ethernet line).

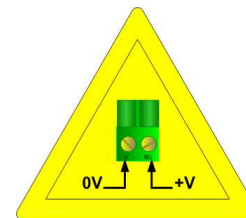
This device can be provided, on request, with a specific software, it can be a gateway for special serial protocol (HD67148):

- Galvanic isolation between Ethernet and RS485;
- Rail DIN;
- Ethernet 10/100 Auto-sensing;
- MAX Baud Rate 115.200 bps (RS485 side);
- Temperature range -40°C to 85°C;
- EMS EN 61000-6-2.

POWER SUPPLY:

Recommended Power Supply			
VDC		VAC	
24v		12v	
VDC		VAC	
Vmin	Vmax	Vmin	Vmax
8v	35v	8v	19v

Caution: Not reverse the polarity power.



SOME EXAMPLES:

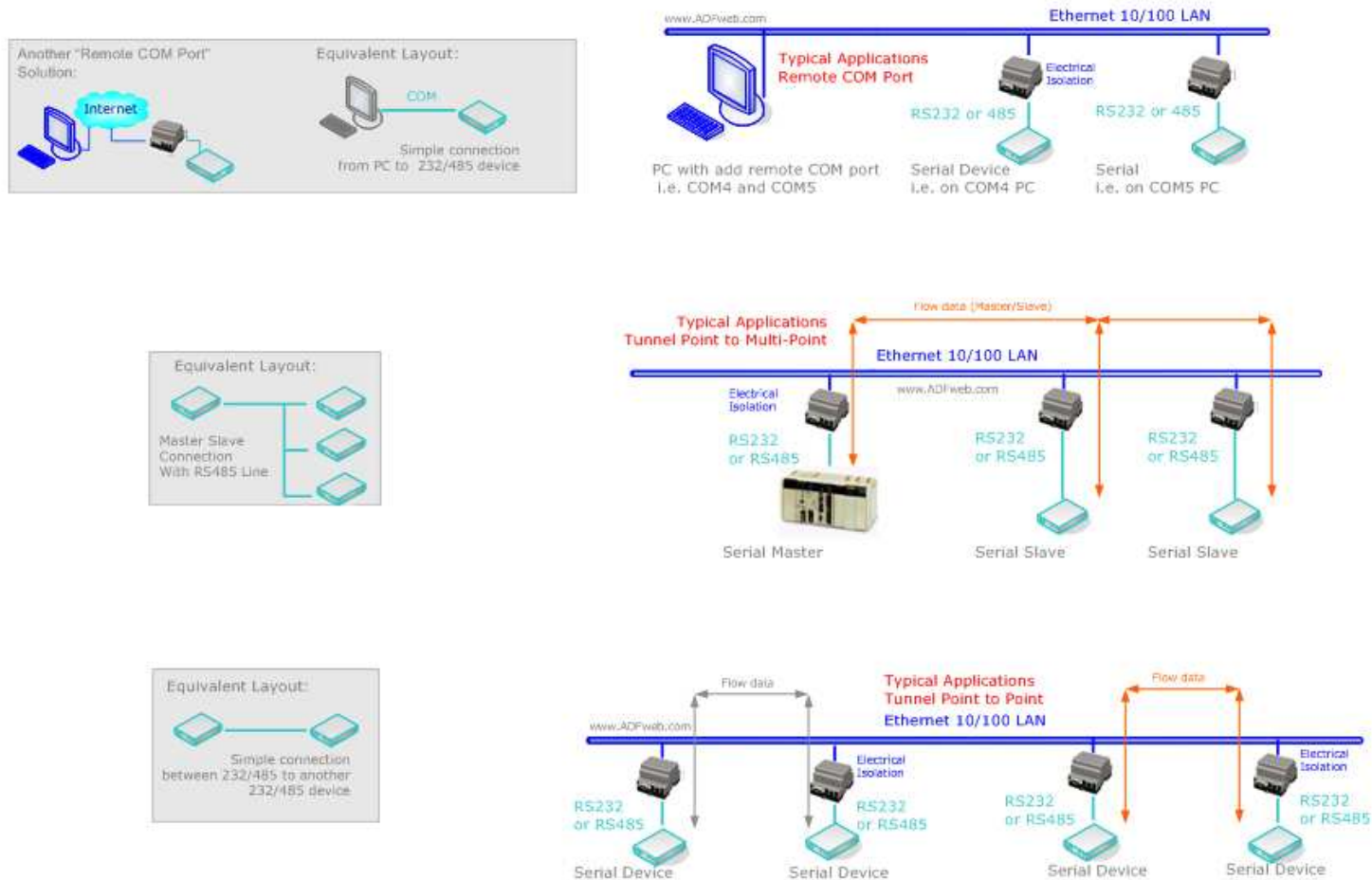


Figure 1: Some examples

CONNECTION SCHEME:

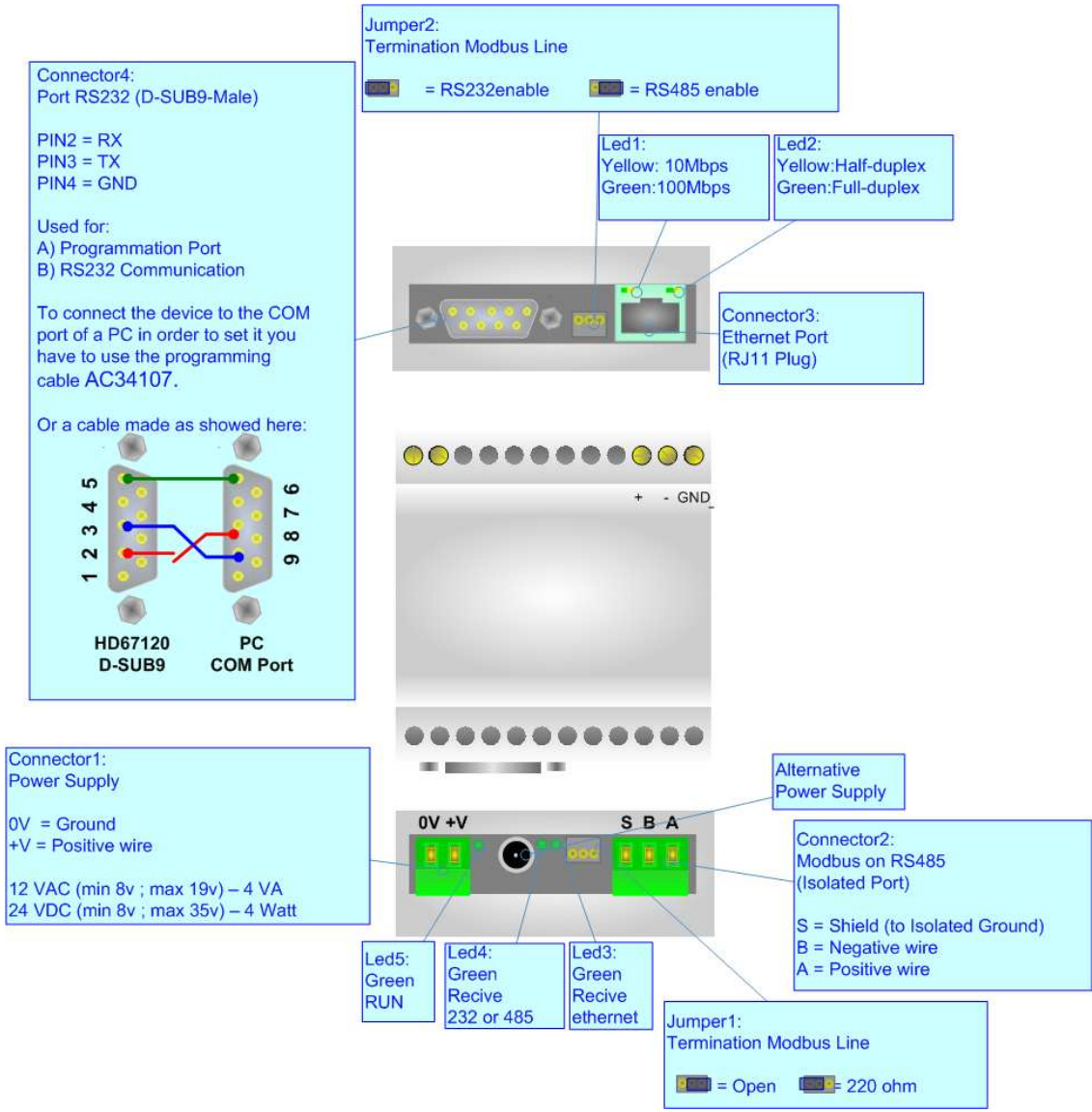


Figure 2: Connection scheme for HD67120

SET-UP OF THE DEVICE:

ADFweb.com supplies the SW67120 software for the configuration of the device.
 The software is downloadable on the site: <http://www.adfweb.com/home/download/download.asp>
 (This manual is referenced to the last version of the software present on our web site).

Connect the RS232 cable from your personal computer to the device at the RS232 port.
 Put the jumper on the enabled RS232 (see Figure 2).
 When launching the SW67120 the “Select Modality” window appears (Fig. 3):

The following modalities are available:

- “Remote COM Port”;
- “Tunnel Point to Point”;
- “Tunnel Point to Multipoint”.

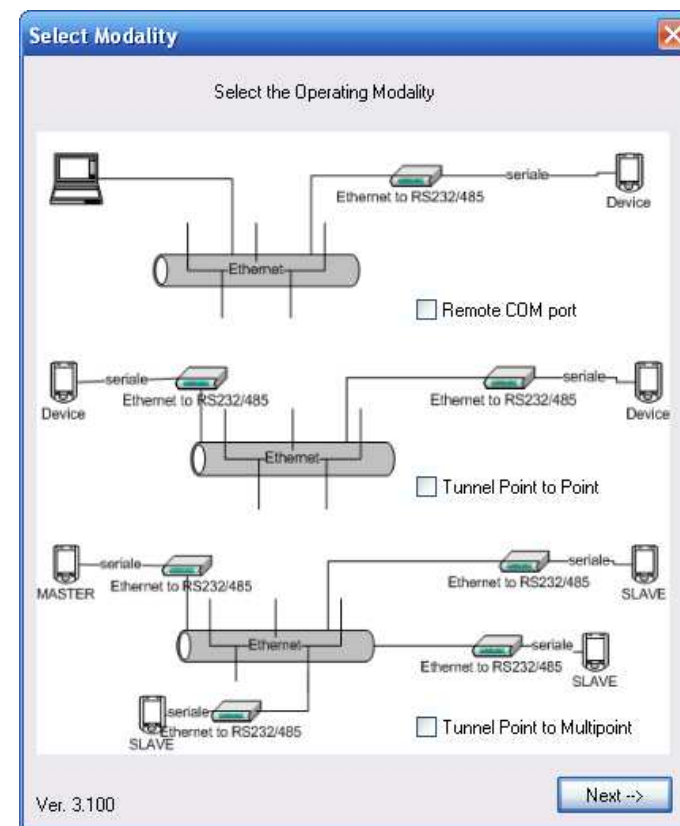


Figure 3: “Select Modality” window

REMOTE COM PORT:

It consists in a configuration in which the device is generally controlled by a PC that is connected using the protocol of the TCP line on the 10001 port. It writes bytes that automatically are sent on serial line and each byte read from the serial port is transmitted through the line to the connected PC.

The address of the device line and the serial line parameters must be set in the setting window (Fig. 4) which relates to this mode.

The means of the fields for "EtherNet to RS232/485 LAN config" are:

- In the field "IP" the IP address of the converter is defined;
- In the field "SubNet Mask" the Subnet Mask of the converter is defined;
- In the field "Port" the Port of the converter is defined.

The means of the fields for "Serial Port Setup" are:

- In the field "Baud Rate" the velocity of the serial port is defined;
- In the field "Parity" the parity of the serial port is defined;
- In the field "Stop Bits" the number of stop bits is defined. You can choose between "1" and "2"; In the field "Flow Control" you can choose the flow control among "none", "XON/XOFF", "CTS/RTS" or "XON/XOFF pass".

If the field "Use Gateway" in the "Gateway" section is checked it is possible to insert the IP Address of the gateway in the field below.

In the field "COM port setup" you can select the COM port.

Once the parameters are set-up, configure the serial port to be used, push the download button, perform a cycle of power-on and wait for the software to complete the proper set-up.

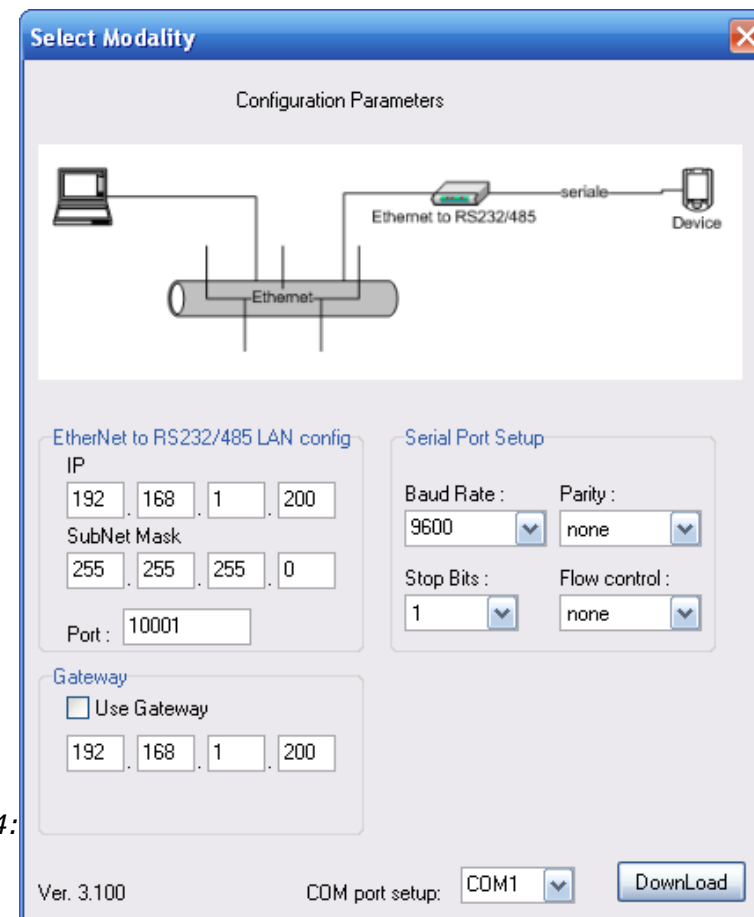


Figure 4:

Figure 4: "Remote COM port" window

TUNNEL POINT TO POINT:

It is a mode that allows the extension of a serial line, using a LAN line. The two devices in this mode must be configured in a coherent way between the two, or in such a way that both read the IP address of the other one. This mode allows exchanges of packets with UDP protocol.

The address of the device line and the serial line parameters must be set in the setting window (Fig. 5) which relates to this mode.

The means of the fields for "EtherNet to RS232/485 LAN config" are:

- In the field "IP" the IP address of the converter is defined;
- In the field "SubNet Mask" the Subnet Mask of the converter is defined;
- In the field "Port" the Port of the converter is defined.

The means of the fields for "Serial Port Setup" are:

- In the field "Baud Rate" the velocity of the serial port is defined;
- In the field "Parity" the parity of the serial port is defined;
- In the field "Stop Bits" the number of stop bits is defined. You can choose between "1" and "2";
- In the field "Flow Control" you can choose the flow control among "none", "XON/XOFF", "CTS/RTS" or "XON/XOFF pass".

If the field "Use Gateway" in the "Gateway" section is checked it is possible to insert the IP Address of the gateway in the field below.

In the field "Remote IP" for "Tunneling" it is necessary to insert the IP address of the remote device in this mode in addition to the set-up of the device's line.

In the field "COM port setup" you can select the COM port.

Once the parameters are set-up, configure the serial port to be used, push the download button, perform a cycle of power-on and wait for the software to complete the proper set-up.

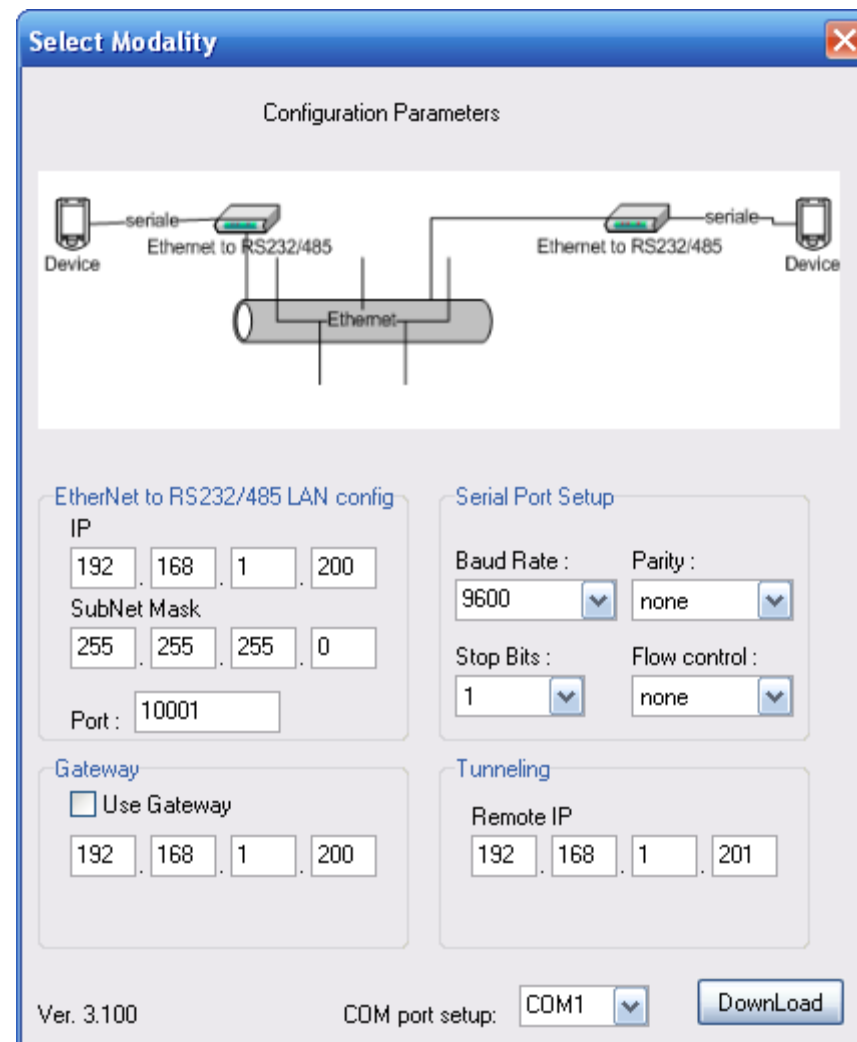


Figure 5: "Tunnel Point to Point" window

TUNNEL POINT TO MULTIPOINT (MASTER SIDE):

This mode allows a serial line to be extended into sections, using a LAN line, where the device is on the side of the one that controls the line as Master and the others are on the client's side.

In order to configure a device as Master the field "Master Side" must be checked. In the case of the master, it is not necessary to provide any other address because the packets are sent as broadcasts.

The address of the device line and the serial line parameters must be set in the setting window (Fig. 6) which relates to this mode.

The means of the fields for "MASTER LAN CONFIG" are:

- In the field "IP" the IP address of the converter is defined;
- In the field "SubNet Mask" the Subnet Mask of the converter is defined;
- In the field "Port" the Port of the converter is defined.

The means of the fields for "Serial Port Setup" are:

- In the field "Baud Rate" the velocity of the serial port is defined;
- In the field "Parity" the parity of the serial port is defined;
- In the field "Stop Bits" the number of stop bits is defined. You can choose between "1" and "2";
- In the field "Flow Control" you can choose the flow control among "none", "XON/XOFF", "CTS/RTS" or "XON/XOFF pass".

If the field "Use Gateway" in the "Gateway" section is checked it is possible to insert the IP Address of the gateway in the field below.

In the field "COM port setup" you can select the COM port.

Once the parameters are set-up, configure the serial port to be used, push the download button, perform a cycle of power-on and wait for the software to complete the proper set-up.

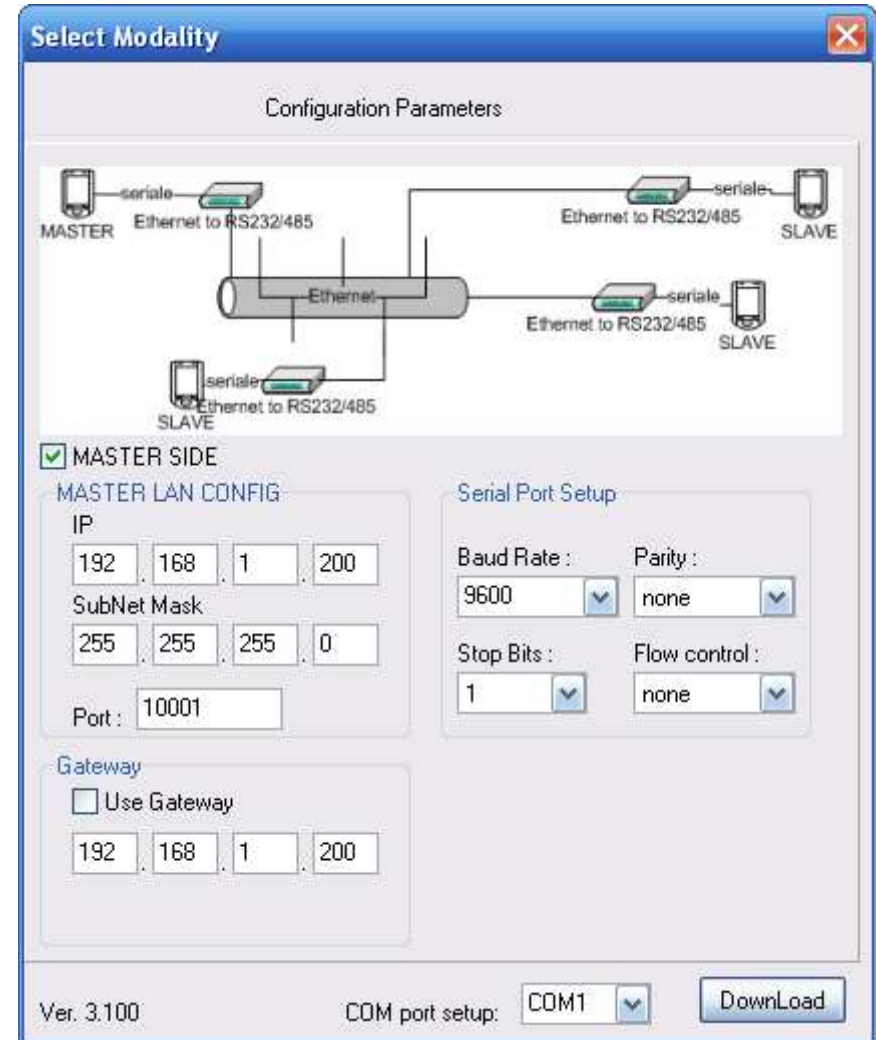


Figure 6: "Tunnel Point to Multipoint (Master Side)" window

TUNNEL POINT TO MULTIPOINT (SLAVE SIDE):

For configure a device as Slave the field "Master Side" of "Operating Modality" section should not be checked. In the case of the slave it is necessary to provide the IP address of the Master Converter.

The address of the device line and the serial line parameters must be set in the setting window (Fig. 5) which relates to this mode.

The means of the fields for "CLIENT LAN CONFIG" are:

- In the field "IP" the IP address of the converter is defined;
- In the field "SubNet Mask" the Subnet Mask of the converter is defined;
- In the field "Port" the Port of the converter is defined.

The means of the fields for "Serial Port Setup" are:

- In the field "Baud Rate" the velocity of the serial port is defined;
- In the field "Parity" the parity of the serial port is defined;
- In the field "Stop Bits" the number of stop bits is defined. You can choose between "1" and "2";
- In the field "Flow Control" you can choose the flow control among "none", "XON/XOFF", "CTS/RTS" or "XON/XOFF pass".

If the field "Use Gateway" in the "Gateway" section is checked it is possible to insert the IP Address of the gateway in the field below.

In the field "Remote IP" for "MASTER IP" it is necessary to insert the IP address of the remote device in this mode in addition to the set-up of the device's line.

In the field "COM port setup" you can select the COM port.

Once the parameters are set-up, configure the serial port to be used, push the download button, perform a cycle of power-on and wait for the software to complete the proper set-up.

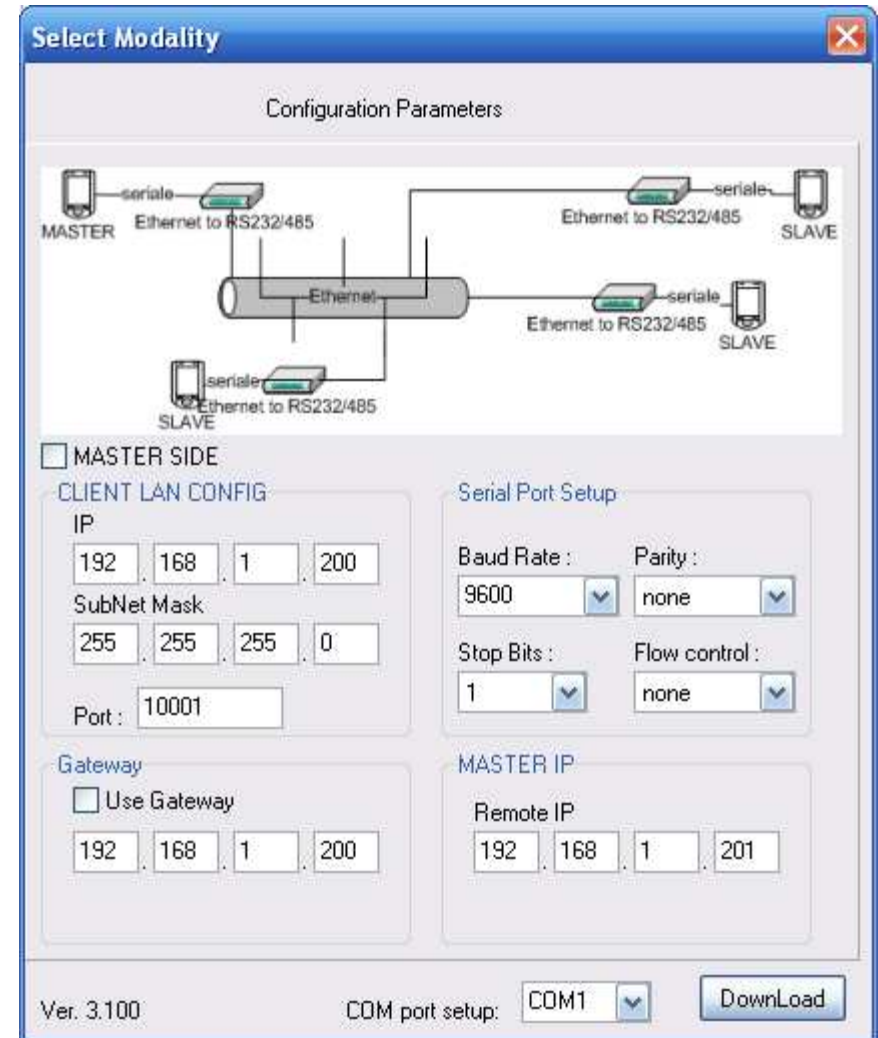


Figure 7: "Tunnel Point to Multipoint (Slave Side)" window

CHARACTERISTICS OF THE CABLES:

The connection with the Ethernet socket must be with a Ethernet Cable with a RJ45 Plug.

It is recommended that the RS232 Cable not exceed 15 meters.

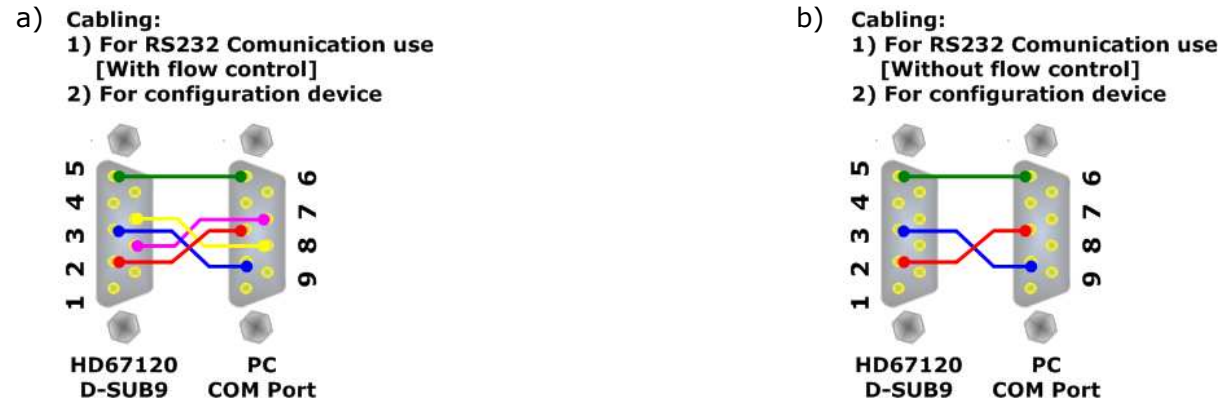


Figure 8: RS232 cabling configuration

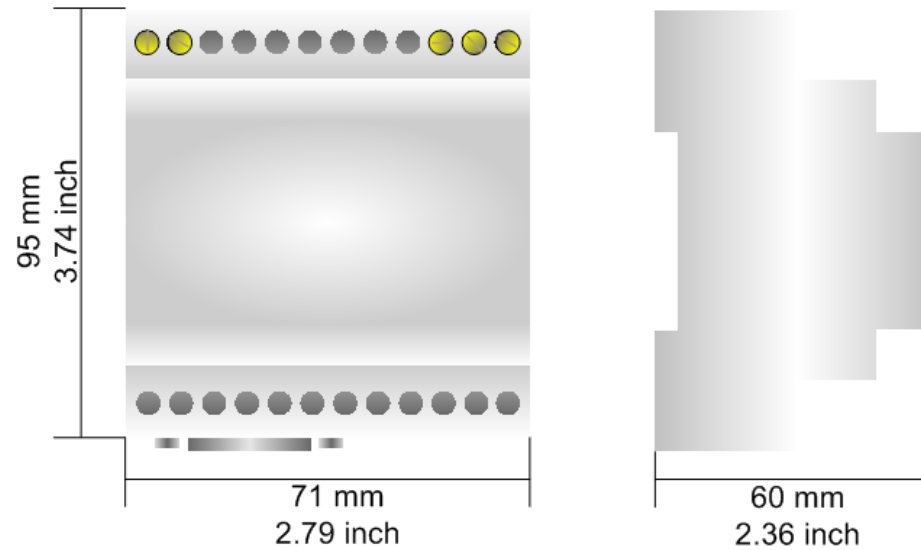
For RS232 communication without flow control and for configure the device, use the cabling configuration illustrated in fig. 7 a.

For RS232 communication with flow control and for configure the device, use the cabling configuration illustrated in fig. 7 b.

The connection with the RS485 socket must be done with a twisted and shielded cable.

The terminal resistor must be inserted when the HD67120 is at the end of the line, using the Terminator jumper.

MECHANICAL DIMENSIONS:



Housing: PVC
Weight: 200g (Approx)

Figure 9: Mechanical dimensions scheme

ORDER CODE:

Order Code: **HD67120** - RS232 / RS485 / Ethernet - Converter

ACCESSORIES:

Order Code: **AC34001** - Rail DIN - Power Supply 220/240V AC 50/60Hz – 12 V AC

Order Code: **AC34002** - Rail DIN - Power Supply 110V AC 50/60Hz – 12 V AC

Order Code: **AC34104** - European Input - Power Supply 230V AC 50Hz – 12 V DC

DISCLAIMER

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OTHER REGULATIONS AND STANDARDS

WEEE INFORMATION



Disposal of old electrical and electronic equipment (as in the European Union and other European countries with separate collection systems).

— This symbol on the product or on its packaging indicates that this product may not be treated as household rubbish. Instead, it should be taken to an applicable collection point for the recycling of electrical and electronic equipment. If the product is disposed correctly, you will help prevent potential negative environmental factors and human health, which could otherwise be caused by inappropriate disposal. The recycling of materials will help to conserve natural resources. For more information about recycling this product, please contact your local city office, your household waste disposal service or the shop where you purchased the product.

RESTRICTION OF HAZARDOUS SUBSTANCES DIRECTIVE



The device respects the 2002/95/EC Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (commonly referred to as Restriction of Hazardous Substances Directive or RoHS).

CE MARKING



The product conforms with the essential requirements of the applicable EC directives.



WARRANTIES AND TECHNICAL SUPPORT:

For fast and easy technical support for your ADFweb.com SRL products, consult our internet support at www.adfweb.com. Otherwise contact us at the address support@adfweb.com

RETURN POLICY:

If while using your product you have any problem and you wish to exchange or repair it, please do the following:

- 1) Obtain a Product Return Number (PRN) from our internet support at www.adfweb.com. Together with the request, you need to provide detailed information about the problem.
- 2) Send the product to the address provided with the PRN, having prepaid the shipping costs (shipment costs billed to us will not be accepted).

If the product is within the warranty of twelve months, it will be repaired or exchanged and returned within three weeks. If the product is no longer under warranty, you will receive a repair estimate.

PRODUCTS AND RELATED DOCUMENTS:

Part	Description	URL
HD67118	Converter RS232 to RS485 Isolated	www.adfweb.com?Product=HD67118
HD67119	Converter USB 2.0 to RS485 Isolated	www.adfweb.com?Product=HD67119
HD67507	Gateway Modbus TCP Server to RTU Master	www.adfweb.com?Product=HD67507
HD67510	Gateway Modbus TCP Client to RTU Slave	www.adfweb.com?Product=HD67510